Insper

Manuel Nunes de Sousa Seiça

The impact of ownership concentration on the success of M&A deals: evidence from Brazil

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Thesis presented to the Professional Master's in Economics as a partial requisite for the attainment of the title of Master in Economics.

Advisors: Prof. Adalto Barbaceia Gonçalves (Insper)
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Área de Concentração: Economia dos Negócios

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Insper

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Prof. Adriana Bruscato Bortoluzzo
Insper

_____

Prof. Fernando Anjos
Nova SBE

_____

Prof. Irem Demirci
Nova SBE

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Resumo

Este trabalho explora o impacto de eventos de M&A na performance de empresas Brasileiras, bem como o dúbio efeito imposto pela concentração de participação na empresa, no sucesso destas operações, durante o período entre 2008 e 2020. O recente aumento no número deste tipo de negócios patrocinados por empresas Brasileiras motivou uma nova onda de investigação relativamente aos efeitos destas operações e às suas especificidades. Uma vez que se trata de um fenómeno recente, há ainda significantes falhas na literatura a ele associada, que este trabalho pretende colmatar.

Nomeadamente, investiga se as atividades de M&A de facto agregam valor às empresas Brasileiras ou não, e estuda como os conflitos de agência tipo I e tipo II afetam os retornos anormais das ações das empresas aquisitivas. Ao entender a relação entre a concentração da estrutura acionista e ambos os tipos de conflitos de agência, é possível inferir o efeito líquido que um aumento de concentração da estrutura acionista tem no sucesso de eventos de M&A. Apesar de controversa, a metodologia “event study” é utilizada, e são construídos modelos de “multiple linear regressions”. É hipotetizado que deals de M&A adicionem valor às empresas aquisitivas e que maior concentração da estrutura acionista resulta no abate do conflito de agência tipo I, afetando positivamente o sucesso de negócios de M&A, ao mesmo tempo que aciona o conflito de agência tipo II, afetando negativamente os resultados de eventos de M&A. Os resultados conferem uma base sólida para suportar ambas as hipóteses descritas.

Palavras-Chave: M&A. Brasil. Conflito de Agência. Concentração de Participação.

Abstract

This paper explores the impact of M&A events on the performance of Brazilian firms and the dubious effects imposed by ownership concentration on the success of such deals over the 2008 to 2020 period. The recent increase in the number of deals sponsored by Brazilian companies prompted a wave of new research on the effect of this activity and its specificities. Because it is a recent phenomenon, there is still a significant gap in the literature, which this paper expects to narrow.

Particularly, it investigates whether or not M&A activities add value to Brazilian firms, and it studies how agency conflict type I and type II affect the abnormal returns of the acquiring company's shares. By understanding the relationship between ownership concentration and both types of agency conflicts, the net effect of increased levels of ownership concentration on M&A deals' success can be inferred. Even though controversial, the event study methodology is employed, and multiple linear regression models are run. It is hypothesized that M&A events add value to acquiring firms and that ownership concentration leads to the abatement of agency conflict type I, positively affecting M&A success, while triggering agency conflict type II, negatively affecting the outcome of M&A events. Results offer solid support to accept both hypotheses.

Keywords: M&A. Brazil. Agency Conflict. Ownership Concentration.

Sumário Executivo

Não existe ainda nenhum enquadramento teórico que relacione, de forma precisa, a atividade de M&A com os incentivos dos gestores e outros interessados nas empresas, nem uma estrutura que ligue certas características das empresas e dos negócios com o sucesso dos eventos de M&A. Existem, na literatura moderna, várias tentativas para explicar o porquê de tal atividade ocorrer, mas nenhum consenso foi ainda atingido. Alguns autores defendem que existem sinergias que podem vir a ser aproveitadas pelas empresas compradoras, o que despoleta aquisições. Outros acreditam que é uma forma de as empresas se adaptarem de forma rápida a novos cenários na sua indústria e na economia. Autores mais céticos a estas hipóteses defendem que, se uma equipa de gestão for bem sucedida a adquirir uma empresa liderada por uma outra equipa de gestão, então é expectável que seja capaz de acrescentar valor à empresa, pelo que os acionistas torcem para que tal aconteça. Uma hipótese mais direta colocada por alguns investigadores é que este tipo de negócios diminui a quantidade de cash disponível nas empresas, o que as impede de investir em projetos que acabariam por destruir valor. Apesar de todas estas ideias, é ainda pouco claro como certas características e circunstâncias afetam o sucesso do pós-deal de M&A.

Este trabalho foca-se no período entre 2008 e 2020 e explora o efeito da concentração da estrutura acionista no sucesso de negócios de M&A no Brasil. Este tópico é importante visto que cada vez mais empresas que operam no middle market estão a envolver-se neste tipo de estratégia, sendo que são estas as empresas mais suscetíveis a estar expostas aos conflitos de agência abordados neste estudo, por meio de participações familiares ou aquisições em fases primárias da empresa.

Este trabalho inspecciona, principalmente, o impacto dos conflitos de agência tipo I e tipo II (que são afetados de forma inversa por altos níveis de concentração da estrutura acionista) na performance de deals de M&A. O estudo considera um período de tempo mais alargado do que estudos passados e é agnóstico quanto às indústrias analisadas. O conflito de agência tipo I é o conflito existente entre gestores e acionistas, cujos incentivos não estão perfeitamente alinhados. O conflito de agência tipo II é o conflito existente entre acionistas maioritários e minoritários, caracterizado por tentativas de expropriação por parte dos acionistas maioritários. É hipotetizado

que negócios de M&A agreguem valor para as empresas e que, apesar do efeito líquido de um maior nível de concentração da estrutura acionista no sucesso de deals de M&A ser positivo, a consequente diminuição do conflito de agência tipo I afeta-os positivamente, ao passo que o desencadear do conflito de agência tipo II afeta-os negativamente.

Após o espetro de possibilidades ser diligentemente ponderado, foi decidido que se usaria a metodologia de “event study” para obter os resultados pretendidos. Esta metodologia resulta no cálculo dos retornos anormais acumulados das ações de uma empresa (aquisitiva) aquando da aquisição de outra (adquirida). Testes de hipóteses também são levados a cabo para corroborar a robustez dos resutlados obtidos. Para além disso, modelos de multiple linear regressions são criados, na tentativa de capturar, separadamente, os efeitos de ambos os conflitos de agência, permitindo concluir, com significância estatística, relativamente aos seus impactos no sucesso de negócios de M&A.

A primeira seccão do trabalho apresenta a revisão da literatura (à data), relativamente aos estudos feitos sobre o impacto da atividade de M&A na performance das empresas, tanto em economias desenvolvidas como em mercados emergentes. Depois, é dada uma profunda explicação do que consistem os conflitos de agência, como se materializam dentro das empresas e são apresentados resultados empíricos obtidos por outros investigadores. Todos os dados usados neste projeto são descritos, bem como as suas respetivas fontes. Por fim, a metodologia é claramente explicada e são apresentados os argumentos suportados na literatura que justificam a aplicação de determinados filtros e os resultados são demonstrados e interpretados.

Concluindo, os valores obtidos providenciam razões compreensivas e específicas para que se possa inferir positivamente relativamente à veracidade das duas hipóteses inicialmente propostas.

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1 INTRODUCTION

There still is no satisfactory theoretical framework accurately relating M&A activity to managers' and stakeholders' incentives nor one that links firms' and deals' characteristics to the success of each M&A event. There are, in modern literature, several attempts to explain such activity, but no consensus has yet been reached. Some authors defend that it is triggered by the possibility of acquiring firms coming to benefit from synergies or rapidly adjusting to changes in the industry. Others state that a management team that is successful at acquiring another business should suppositionally lead to improved financial performance, which is why shareholders would be interested in engaging in these deals. A more straightforward hypothesis for the existence of M&A activity posits that this kind of decision leaves firms with less cash to spend on negative NPV projects, which would otherwise be invested in. Additionally, it is not clear how and why specific characteristics and circumstances affect post-M&A deal success.

Brazil counts on an economic environment particularly exciting to study. Its openness to international trade is a relatively recent event that still exerts colossal influence in the mergers and acquisitions market. This paper explores the effect of ownership concentration on the outcome of M&A events in Brazil over the 2008 to 2020 period. More and more Brazilian firms operating in the middle market are engaging in M&As, while being the ones more prone to present concentrated ownership structures through family business or early-stage acquisition, reinforcing the importance of the topic of this study in the current real-world scenario.

Mainly, this paper inspects the impact of agency conflict type I and agency conflict type II (which are likely to be inversely impacted by high levels of ownership concentration) on the performance of M&As. Moreover, it adds to this discussion by considering a wider window of time than previous studies and by being industry agnostic. Agency conflict type I is the agency conflict between managers and shareholders, whose incentives are not perfectly aligned. Agency conflict type II is the agency conflict existing between majority shareholders and minority shareholders, characterized by attempts of expropriation by the former. It is hypothesized that M&A deals add value to firms and that, even though the net effect of ownership concentration on M&A success might be beneficial, the consequent abatement of

agency conflict type I positively affects it, while the resultant triggering of agency conflict type II negatively affects it.

The broader literature does not agree on what metric of M&A performance ought to be used, nor what methodology provides more reliable results. Ultimately, after diligently considering the extensive array of possibilities, it was decided what methodology to adopt. An event study is performed to compute the cumulative abnormal returns for the acquiring firm's shares over a certain period around the announcement date. Hypothesis tests are also carried to testify the robustness of the obtained results. These assessments are directed to corroborate the hypothesis that states that M&As add value to Brazilian firms. Additionally, multilinear regression models are built and run, hoping to separately capture the effects of both agency conflicts, enabling to conclude, with statistical significance, regarding their impact on M&A success.

The first section of the paper presents a literature review on the findings (to date) on the impact of M&A activity on firm performance, both in developed and emerging markets. Then, a thorough explanation of what the agency conflicts consist of and how they are materialized is given, and existing empirical evidence on their effects on firm performance is introduced. Also, the results of similar works (exploring identical relationships) are summarized in that section. The data used in this paper is then described, and its sources are unveiled. The reader is also guided through the filters applied to the data set, aiming to display the information needed to conduct the chosen methodology accurately. Lastly, the methodology is rigorously explained, and it is presented literature to support the decisions made regarding it. Lastly, the results obtained are displayed and discussed.

2 LITERATURE REVIEW

This section presents a review of the characteristics of the M&A market, with particular focus on the Brazilian case, as well as a recap of the present-day theories and hypotheses believed to justify the increased importance of such activity. Moreover, the conclusions of previous international and domestic studies are summarized, and the arguments supporting opposing views on the effectiveness of these deals are explored. Additionally, previously made conclusions regarding the effect of ownership concentration on M&A success and their causes are discussed in this segment.

2.1 Merger & Acquisitions

As indicated by King et al. (2004), even though there is evidence that subgroups of firms with particular features engage in this type of activity and experience significant positive returns, existing models fail to pinpoint who those subgroups are. It is recognized within the academic sphere that there is no robust theoretical framework clearly explaining the incentives for M&A decision making, nor one that accurately describes the relationship between deals' and firms' characteristics and post-M&A performance. Instead, there are explanations of particular facts of this activity based on existing firm and agency theory.

Not only is there no universally accepted theoretical framework, but there is also no consensus regarding several features of the empirical research. The two central aspects of disagreement are linked to the more accurate methodology to assess company performance (discussed in the "Methodology" section of this paper) and to the conclusion regarding the net effect of M&A in adding value to firms, discussed below. Most authors who developed works on this universe of knowledge defend that future research should be directed towards investigating how specific characteristics of the firms and deals influence M&A performance, as well as how the corporate governance environment impacts its outcome (Grigorieva and Petrunina, 2015). The purpose of this paper is in line with the narrowing of this gap in the literature, and it does so by uncovering the dubious effect of higher levels of ownership concentration on the success of M&A deals, resorting to data from the Brazilian market.

This kind of research is of exceptional interest for Brazil for several reasons. As eloquently described by Bomfim and Callado (2016), after the economic crisis felt in

Brazil at the end of the 20th century, the country initiated an era of modernization and openness to international trade. For companies to face the challenges imposed by economic globalization, a series of mergers and acquisitions took place in Brazil (domestically and cross-border) and have since accompanied the country's economic evolution (Triches, 1996). Wood Junior, Vasconcelos and Caldas (2004) reveal that the reasons that trigger the interest of Brazilian firms in M&A are mainly strategic and typically aim at incrementing market share, amplify their distribution and logistics networks, and attain corporate and market intellectual know-how. According to a report published by PWC, in the period between 2008 and 2020, 9892 M&A deals took place in Brazil. The increasing engagement of Brazilian companies in this type of deal is indisputable, with around 80% of all deals closed in 2020 involving national players, up from 55% in 2017. Moreover, the middle market was the segment in which engagement increased the most in terms of the number of deals. The companies in this segment are also those expected to present higher degrees of ownership concentration by means of family business or early-stage acquisition, heightening the importance of the topic of this study in the current real-world scenario.

Many attempts have been made at designing reliable theories that could explain the sources of gains following M&A activity. Sharma and Ho (2002) summarized those that were formulated by numerous authors over the years and are more widely accepted as reasonable at the current date:

1) The "synergy theory" stands by the idea that a combination of firms results in synergies stemming from either improved efficiency (lower costs) or improved effectiveness (a more appropriate allocation of scarce resources), which in turn promotes economic and financial gains. These synergies may take the form of *economies of scale*, which are manifested in lower operating and financing expenses through the employment of common raw materials or components and because of an inflated joint debt capacity. They may also take the form of *economies of scope*, which commonly arise from the exchange of intangible assets between the involved firms that are used to lower production costs of several products or services. Lastly, another form of synergy is the augmented *market power* resulting from the combination of formerly independent firms that arms the new firm with increased capacity to charge higher prices to customers while forcing suppliers to accept lower ones.

2) The "market for corporate control theory" argues that every firm is susceptible to being taken over, meaning there is constant competition among management teams

for the rights to manage the firms. Thus, in theory, one should expect a new management team to be more efficient than the occupant one, improving performance once substituted.

3) The “free cash flow theory” posits that, as managers tend to invest the free cash flow in negative NPV projects, acquisitions help alleviate this problem, adding long-term value to the firm. Moreover, according to this theory, the positive effect of acquisitions is higher when paid for in cash or debt (rather than equity), because of the consequent limitations over future free cash flow and its misapplication.

4) Grigorieva and Petrunina (2015) appoint the rapid adjustments (achieved through M&A activity) to regulatory and technological changes in a specific industry or geography as another source of value addition and calls it the “strategic realignment theory.” This theory is successful at explaining periods of increased M&A activity above average.

Even though these four theories all predict that M&A activity should bring about positive abnormal returns, many empirical studies come to an opposite conclusion: merger and acquisition deals are value-destructive. Bearing this fact in mind, other hypotheses are frequently appointed as the reasons why acquisitions take place, even when they do not encompass higher results:

1) The “hubris hypothesis” assigns managers’ pride and arrogance as the basis for their acquisitions thesis. This behavior is driven by a belief of superior capacity to judge synergies where they may not exist, suggests Roll (1988).

2) The “financial hypothesis” is centered on the idea that most acquisition targets are companies in the eminence of bankruptcy or suffering from financial distress (Clark and Ofek, 1994), whose turnaround would entail superior financial gains for the acquirer firm.

3) The “agency hypothesis” posits that, when deciding on whether to participate in M&A deals, managers maximize their personal utility rather than acting in accordance with the maximization of shareholders’ interests (Firth, 1979). Moreover, when there is a misalignment of incentives between majority and minority shareholders, the former may have perverse motivations to expropriate the latter. Frequently, majority shareholders force, through their voting power, the management team to partake in cash-flow deviating activities (like M&A) that result in personal benefits for themselves at the expense of minority shareholders (Liu and Wang, 2013). This hypothesis incorporates the core of this study.

As previously stated, researchers often point towards the impact deals' and firms' characteristics have on post-M&A financial performance as the logical path for future research. This appeal has been heard, and many studies follow precisely that strategy. M&A-related research commonly focuses on the impact of four variables on the subsequent performance of firms: whether or not the acquisition happened between unrelated firms (Lubatnik, Srinivasan and Merchant, 1997), whether the deal was paid for in cash or equity (Franks, Harris and Mayer, 1988), the amount of experience the acquirer previously had in acquiring other companies (Hayward, 2002) and the ownership structure of the acquirer firm (Shim and Okamuro, 2011), which is the literature this paper expects to contribute for. In the following three sections, the main findings of the literature are presented separately for studies focused on international markets, emerging economies, and the Brazilian case. The purpose of doing so is to compile current knowledge on this topic and the influence the different market settings have on it while illustrating the disagreement among authors regarding those insights.

2.1.1 International Markets

Ravenscraft and Scherer (1987) studied the impact of takeovers on the performance of US manufacturing companies. They diligently normalized their measure of performance for business cycle and industry effects and considered possible accounting biases. They found that profitability is substantially lower than in pre-merger years, suggesting that acquisitions harm this type of firm. Analogously, Gregory (1997) reports negative returns for acquiring firms in the UK market and Sharma and Ho (2002) found that, based on four cash flow performance measures, corporate acquisitions did not result in improved performance for Australian companies. Dickerson, Gibson and Tsakalotos (1997) similarly conclude that acquisitions have a systematic detrimental effect on UK companies' profitability.

On the other hand, Martynova, Renneboog and Luc (2011) document that most takeover deals in Europe are expected to generate synergy values as their announcements consistently trigger share price increases (most of which are captured by the target firm). By conducting a standard market-model event-study analysis on the European insurance industry Cummins and Weiss (2004) found that target firms realized substantial positive CAARs.

Phalippou and Gottschalg (2009), like many other authors, found that although acquirers get some benefits for their own, acquirees usually get higher returns. Recognizing the persistence of this puzzle that represents the unbalanced distribution of gains between acquirer and target companies in deals, Capron and Pistre (2002) were intrigued that very few studies emphasized the fact that there is an enormous variance in acquirers' gains. Thereupon, they examined the relationship between acquirer abnormal returns and the resource contribution of the target and acquirer to understand if that could be the reason. They found that acquirers are only expected to earn positive abnormal returns when they transfer their resources to the target instead of the other way around. One of the central conclusions of their study is that the magnitude of the benefit captured by the acquirer depends directly on the distribution of resources among competing bidders, being likely that the acquirer holds unique resources that prevent the competitor bidders from unfolding entirely.

2.1.2 Emerging Markets

According to Bloomberg, the share of emerging markets on the global volume of M&As increased from 5% to around 25% between 2001 and 2012. One of the most apparent drivers for such a boost in importance is the industrial development and modernization of emerging economies. The permanent increase in the number of deals sponsored by players operating in emerging economies prompted a wave of new research on the effect of this activity in the specific environment of these markets.

Grigorieva and Petrunina (2015) advocate the exciting idea that the probability of M&A activity resulting in improved firm performance is lower in emerging economies than in developed ones. They argue that, in emerging markets, it is harder for firms to achieve synergies because of the imperfect institutional environment that ends up increasing transactions costs, operational and investment risks and creating less efficient market mechanisms. Moreover, Narayan and Thenmozhi (2014) propose that emerging market players often overpay for their cross-border acquisitions because of the diminished bargaining power conferred by their small size and lack of international experience, which precludes them from benefiting from increased profitability.

Despite these expectations, Bhaumik and Selarka (2012a) find positive abnormal returns after M&A deals performed by Indian firms and detect that these abnormal returns are more significant the more concentrated the ownership structure

of the acquirer is. On the other hand, using accounting and economic profit measures to assess the post-M&A firm performance of 80 deals over the 2003 - 2009 period Grigorieva and Petrunina (2015) demonstrate that those firms experience a deterioration in performance. Mishra and Leepsa (2012) also conclude that manufacturing companies in India do not experience significantly improved financial performance after mergers. The evident disagreement among authors supports the need for further research on this field and highlights the lack of consistency on the choices of the variables used to measure success.

2.1.3 Brazilian Market

It is fair to argue that financial markets imperfections are more pronounced in emerging economies, where institutions remain in earlier stages of development and often lack transparency and reliability. Although Brazil is considered an emerging market, it does not share all the concerns associated with those economies anymore. The concern with weak corporate governance standards in firms, allied with poor market institutions, is given particular importance in the literature associated with M&A.

As noted by Campello (2012), minority shareholders lacked legal protection in Brazil, resulting in the relocation of Brazilian shares trading to US exchanges. In an effort to avoid (and reverse) this tendency, the São Paulo Stock Exchange created, in 2001, “Mercado Novo”: a premium listing segment of B3 for the trading of shares of companies that voluntarily commit to adopting higher corporate governance standards than the ones required by law. These structural changes led to increased confidence from investors in Brazil and alleviated the pejorative effects of weak governance.

When assessing the performance of cross-border M&A activity led by Brazilian firms, Bortoluzzo et al. (2014) found that higher financial performance was generated for those firms with previous experience in international acquisitions. Aligned with these results, Matias and Pasin (2001) verify there was an increase in profitability of Brazilian firms that engaged in M&A processes between 1995 and 1997 and that those gains stemmed largely from cost synergies. Rocha, Iootty and Carlos Ferraz (2001) analyzed the same relationship in Brazilian industrial firms between the years of 1990 and 1997 and found no evidence of profitability increases up until two years after the acquisition date.

Once again, the studies mentioned above reflect the existent discordance regarding the effect of M&A activity in Brazil. This paper adds to this discussion by considering a wider window of time and by being industry agnostic.

2.2 Agency Conflicts

Smith (1776) was the first to mention the principle and agent relationship and, since then, the separation of ownership and control in companies has been receiving more and more attention from researchers. Jensen and Meckling (1976) were the ones to introduce the discussion about agency problems, stating that imperfect contracts mediate the relationships between agents and principals. They explained that the principal hires the agent to act on his behalf, delegating to the agent decision-making authority, who in turn has the ability and incentives to act according to his self-interest at the expense of the principle. In a firm, as stated by Huu Nguyen, Thuy Doan and Ha Nguyen (2020), agency costs are internal expenses hidden in decisions that are not aimed at maximizing company profits.

For what matters, two types of agency conflicts are commonly considered in corporate governance research. Agency Conflict Type I is the agency conflict existent between managers and shareholders, whose incentives are not perfectly aligned, and which relationship is regulated by an imperfect contract, subject to limited monitoring (Bhaumik and Selarka, 2012). Agency Conflict Type II is the agency conflict existing between majority shareholders and minority shareholders. This conflict is characterized by the pursuit of private benefits by the majority shareholders at the firm's expense, which is unavoidably canalized to minority shareholders (Leal and Carvalhal da Silva, 2005).

The effect of ownership concentration on firm value has long been a topic of interest in the related literature. Empirical evidence has not always been in line with expectations drawn in light of existing corporate finance theory, according to which the effect of ownership concentration on firm value could be positive or negative, depending on the magnitude of concentration. The positive effect conforms with the efficient monitoring hypothesis, stating that a more concentrated ownership structure is more efficient and has higher incentives to monitor management decisions, minimizing the adverse effects caused by the misalignment of incentives (Jusoh, 2016). In line with the expropriation hypothesis (Iturriaga & Crisostomo, 2010), the

negative effect is more relevant when ownership concentration reaches a certain level at which large shareholders have the power to increase their moral hazard and collect private benefits at the expense of minority shareholders. In virtue of the interaction between both effects, it is expected to be found a bell-shaped relationship between the level of ownership concentration and firm value (rather than a linear effect). To summarize, such a relationship is a combination of the positive effect of the increased monitoring conducted by majority shareholders and the negative effect of expropriation performed by this group towards minority shareholders (Faisal, Majid, and Sakir, 2020).

The role of M&A activity in the framework of agency conflicts is debatable and often appointed as both their cause and a consequence. By pushing the execution of M&A deals, management teams might simply be attempting to exploit private benefits (empire-building or bigger salaries) at the expense of shareholders. On the one hand, M&A deals pushed by shareholders might be an effort to minimize the possibility of agency conflict type I from being expressed by reducing the amount of cash at the disposal of the management team. On the other hand, it might be triggered by agency conflict type II, embodying a suboptimal investment decision for the firm, at the service of exclusive benefits seized by majority shareholders (Villalonga and Amit, 2006). The purpose of this paper is precisely to investigate the impact of the concentration of the ownership structure on the success of M&A deals performed by Brazilian firms, which are cash-flow deviating events and are thus subject to these types of agency problems.

Although the effect of agency costs in family-controlled firms has been little explored, as highlighted by Faisal, Majid and Sakir (2020), this is a topic that cannot be neglected. The studies that have been undertaken show a lack of consensus regarding whether or not family ownership mitigates agency conflicts. Because this type of firm is perceived as the backbone of the Brazilian economy, one section in this paper is dedicated to exploring what findings are offered by the existing literature on the theme.

2.2.1 Agency Conflict Type I

Agency conflict type I arises within a principal (shareholders) agent (management team) relationship, in which the principal gives the agent the power to engage his rights. As explained by Faisal, Majid and Sakir (2020), shareholders

provide funds and facilities for the firm to function while the management team manages it. The principal is entitled to the firm's results in the form of profit, and the agent receives a salary, bonus, and other kinds of compensations. The conflict arises when managers make decisions that instead of maximizing shareholders' returns, are consistent with the managers' personal interests (Kumar Bhaumik and Selarka, 2008). This happens because management teams are in charge of designing and implementing policies, while equity holders assume the majority of the risks associated with those decisions. Because managers suffer little to no wealth effects of their actions, agency conflict type I arises, as Penedo Sardenberg (1988) stated.

There are several ways in which this type of agency is manifested. Besides the possibility of acting opportunistically, there is also the chance that managers cheat, steal, self-deal, shirk their responsibilities affecting operations, adopt a free-riding attitude not adding any value to the functioning of the business, or even seize perquisites for their personal benefit (Penedo Sardenberg, 1988). Additionally, management teams may seek to weaken the mechanisms able to control or replace them, defending their positions and subtracting shareholders' powers (Séverin, 2001). Even though this kind of behavior is predominantly attributed to the pursuit of the maximization of managers' private utilities, other reasons are appointed. Kumar Bhaumik and Selarka (2008), for example, argue that their pride may condition managers in some of their decisions, irrespective of the outcome for the firm. Either blindly committing to an acquisition or engaging in unbridled empire-building activities, managers have the power to decide and enforce their will.

Over the years, with the precious input of academia, many mechanisms have been put in place to mitigate actual expenses caused by this conflict. Several techniques aim at decreasing the available free cash flow to managers. Jensen (1986) argues that dividend payments are an efficient mechanism to do so, as they result in less cash available for managers to shift for their personal use or invest in unprofitable projects. On the same page, Séverin (2001) indicates increased debt levels as another limitation for agency conflict expenses, as the risk of default (and subsequent bankruptcy) under missed repayments leads to a more disciplined financial behavior, prompted by fear of job loss. Kumar Bhaumik and Selarka (2008) indicate M&A as a mechanism of last resort, through which shareholders seek the market as a source of discipline over managers' decisions. Apart from the cash flow reduction techniques, the answer to reducing agency problems might lie in supervisory systems of

management activity. In economies where the financial system is bank-based, bank ownership can effectively limit harmful strategic decisions, thus improving the performance of firms (Mork and Hu, 2000). Sehrawat et al. (2019) argue that effective corporate governance mechanisms may help to control the divergence of interests between managers and shareholders, which is one of the topics under assessment in this study: does a more concentrated ownership structure improve such control mechanisms, leading to improved performance?

As it is clear by now, numerous variables influence the magnitude and effects of this agency problem. There is a vast literature on said variables and their real impact on mitigating (or inflating) the conflict. The most popularly named ones include the size of the board (which has implications on the easiness of cooperation), CEO and Chairman duality (which has implications in terms of information asymmetries), management ownership (which measures the amount of wealth effects managers suffer from their decisions) and ownership concentration (which has implications on the degree of surveillance over management decisions). Another exciting consideration studied by Villalonga and Amit (2006) is whether or not the largest shareholder is an institutional investor. They hypothesize that this kind of investor has minimal incentive to revert agency problem type I through monitoring because the private benefits originated are diluted among several independent owners.

Not surprisingly, empirical research has led to opposing conclusions. Nevertheless, it is essential to have in mind what those were. Hu and Izumida (2008) find that increased ownership concentration on the hands of the ten biggest owners has a positive relationship with firm performance, while the same metric applied to the five biggest owners has a U-shaped relationship with performance in the Japanese market. Claessens and Djankov (1999) show that a ten percent increase in concentration leads to a three percent increase in profitability, in the Czech Republic. Opposingly, Mohammed (2018) finds that ownership concentration affects firm performance negatively in the Jordanian stock market.

2.2.2 Agency Conflict Type II

The issues related to agency conflict type II are critical for the literature on M&A and its effects on corporate performance. Additionally, this type of agency problem tends to predominate in emerging markets, which is why the scope of this paper ought

to be very useful in adding to the existing literature of M&A and corporate governance on the Brazilian market.

Costs associated with agency conflict type II are caused by a conflict between majority shareholders, who control the firm's assets, and minority shareholders, who co-finance those assets but bear the risk of expropriation (Villalonga and Amit, 2006). Although the literature correctly considers voting rights concentration as a necessary condition for the arousal of agency conflict type II, it consistently fails to recognize that it is not sufficient. Bozec and Laurin (2008) avidly explain that the power of majority shareholders to intentionally decrease firm value and expropriate minority shareholders is restrained when their cash-flow rights match their voting rights because of their financial incentives not to do so. Instead, agency conflict type II becomes a severe issue when majority shareholders control the voting rights, despite owning a small fraction of the cash-flow rights. This segregation of rights is a critical element of this conflict and is thoroughly accounted for in this study.

Among all available paths for expropriation, two are regularly appointed as the most common ones: pyramiding and non-voting shares. Hong, Kim and Welker (2017) contend that pyramidal or cross-shareholding ownership structures are associated with a disconnection between voting and cash-flow rights, leading to conflict type II. This problem is materialized in the unbalanced power that majority shareholders have to elect the board of directors and decide on cash-deviating activities that are well in excess of the losses inflicted on their (small) cash-flow claims.

This effect is obviously not felt in the same magnitude in every market and firm setting, existing some attenuating or intensifying conditions for the conflict. Again, Villalonga and Amit (2006) explain that if the majority shareholder is an institutional investor, his incentives to expropriate are lower than that of individual investors because the benefits collected are split among several investors. On the other hand, in markets where there is insufficient investor protection, like it used to be in Brazil before "Mercado Novo" (and still is to some extent), high private benefits of control are not rare to be found (Dyck and Zingales, 2004). In the same way, expropriation is more likely to happen in firms with more significant amounts of free cash flow.

An incontestable real-world example of this conflict is the case described by Bennedsen et al. (2012). By 2000, the Brazilian government owned 66.67% of the voting shares and 33.33% of the cash-flow rights of Banespa bank, granting it total control of the bank. In November that year, the Brazilian government decided to sell its

position to Banco Santander, who offered a 912% premium over the shares' price. Because the Brazilian legislation did not mandate the offering of equal-price provisions, Santander was able to make an offer for the government shares only, excluding all other shareholders from the deal.

The legislation has since evolved and nowadays investors benefit from increased levels of protection. Ruling out any skepticism regarding the real effects of such policies, Carvalho and Pennacchi (2012) proved that the migration to premium listings in Brazil (where corporate governance standards are stricter) brought about positive abnormal returns for those firms' shareholders. Moreover, firms listed in the "Mercado Novo" were obliged to issue shares with tag-along provisions that ensured that, in future share sales, minority shareholders would receive the same price as majority shareholders. Bennedsen, Nielsen and Nielsen (2012) show that such tag-along rights credibly reduced the perception investors have on the possibility of expropriation by controlling shareholders by testing the hypothesis on a sample of Brazilian issuances of tag-along rights and finding a positive abnormal return of around 5% for the issuer.

As usual, empirical research has not reached a consensual conclusion regarding the real effect of agency conflict type II on firm financial performance. Although many point towards a negative relationship between voting concentration and firm performance (Leal and Carvalhal da Silva, 2005), other authors come to different conclusions. It is the case of Hamelin (2011), who upholds a fascinating thesis. The author explores small-business owners' motivations to structure control using an SBG[1], rather than developing a stand-alone firm. At first glance, one is rushed into thinking that it is just a mechanism of separation of control and cash-flow rights, enhancing the dominant shareholder's control, allowing for expropriation. Though, the author finds that, in France, this ownership structure is a strategy to reduce the dominant shareholders' wealth exposure to business risk rather than an attempt to harvest private benefits at the expense of minority shareholders.

[1] An SBG is an ownership structure where a dominant shareholder holds several firms through a control chain, while averaging the size of a small and medium enterprise (annual turnover below 50 million euros), (Hamelin, 2011).

2.2.3 Family Ownership

In Brazil, family-owned or controlled firms have a starring role in the country's business fabric (Luiz Carvalhal da Silva, Pereira and Leal, 2006). According to an official survey run by KPMG on the Brazilian market, this type of firm, in 2016, accounted for as much as 90% of all firms, were responsible for 65% of the Brazilian GDP, and employed around 75% of the working force.

A popular topic of investigation in the corporate finance literature is the effect of family ownership on firm performance. Villalonga and Amit (2006) find that family control in excess of ownership reduces firm value proportionally to the gap between those rights and that this disparity is manifested in the form of pyramids, cross-holdings, voting agreements, or through the creation of multiple share classes. Contrarily, according to Penedo Sardenberg (1988), several studies support the stewardship theory. It encompasses the idea that family owners do not act driven solely with their interest in mind but instead look to benefit stakeholders to preserve the family's good name and values.

There is a vast range of alternative strategies family owners use to expropriate minority shareholders, and a specific reason backs each. Stulz (1988) mentions the power family owners possess to block takeover attempts, even when they could positively affect firm value. Johnson et al. (2000) highlight the possibility of family owners making suboptimal investments (like overexpansion through M&A) to increase their geopolitical presence and power, while minority shareholders share none of the benefits derived from it. This author also mentions a pervasive strategy denominated by tunneling. This process consists of transferring large sums of cash from a firm to other companies (generally at the top of a pyramidal structure of control) in a process in which public shareholders from firms at the bottom of the pyramid end up being expropriated from their rights over the transferred cash. Moreover, identified by Hendry (2002) as "honest incompetence," top management positions are often assigned to members of the family regardless of their capability to conduct business most profitably.

Despite the formulation of the aforementioned agency conflicts being a theoretical exercise, they have found compelling support in empirical research. Moreover, on a survey conducted by KPMG on family-run businesses in Brazil, the great majority of respondents admitted that one of the most challenging tasks related

to corporate governance is to maintain a clear separation of business and family's interests and that strong internal controls are required to do so. Simultaneously, 39% of surveyed families answered that they keep certain decisions within the family (even if circumventing corporate governance controls is needed), despite existing within the firm bodies responsible for those decisions.

The most sought-after question on family-ownership-related literature is which of the two agency problems faced by minority shareholders damages firm value the most and whether family-ownership destroys or adds value to an enterprise. Villalonga and Amit (2006) find that the answer to that question firmly depends on whether the CEO is the founder of the business (first generation), in which case firm value seems to increase, or a successor (second generation onwards), in which case firm value seems to be destroyed. Shim and Okamuro (2011) results indicate that, compared to non-family businesses, family-owners fail to enhance operating performance after a merger. On the other hand, Ben-Amar and André (2006) studied the Canadian stock market over the 1998 – 2002 period and concluded that, after an acquisition, abnormal returns to the stock of family-owned firms were significantly higher than those to non-family businesses. They believe this to be a sign of faith from investors in the ability of Canadian regulators to protect minority shareholders' interests. Overall, the real impact of family ownership is unknown, and it likely depends on several factors, which is why the results of this study should be interpreted keeping in mind the possible effects of family ownership on post-M&A performance.

2.3 Hypotheses Formulation

This study aims at evaluating the impact of ownership concentration on the success of M&A deals. Based on the existing literature and the Brazilian market conditions over the examined period, the following hypotheses are formulated:

Hypothesis 1: M&A events add value to Brazilian firms.

Hypothesis 2: Increased levels of ownership concentration result in the abatement of agency conflict type I, positively affecting M&A success, while triggering agency conflict type II, negatively affecting the outcome of M&A events.

3 DATA

3.1 Data Sources and Screenings

The quality of the data used for the analysis is of significant importance because it sets the basis for many assumptions related to the measurement of ownership concentration of companies, and it defines the dates to be considered for each event under analysis. Data were collected from four primary sources, widely considered reliable and trustworthy, and from the companies' official websites, allowing one to be confident in their accuracy. Only Brazilian-based public companies were considered because the study focuses on this specific geography.

The data on M&A events and the corresponding characteristics were retrieved from Eikon's databases, and it consists of information on the targets' and the acquirers' individual characteristics (name, industry, and ultimate parent) as well as information related to each deal itself (form of transaction, deal attitude, deal size and deal status). Daily share prices of the acquirer companies are the basis for the event study analysis performed and were obtained through Bloomberg and Comdinheiro. Other financial information found in the companies' financial statements was retrieved from Bloomberg and the companies' websites. Finally, each company's ownership structure details on the specific dates right before each M&A event (owners' names, nationalities, controlling status, % of ownership)[2] were found on the Comdinheiro platform.

Another fundamental piece of information needed for running the event study analysis is the daily returns of a market portfolio. This portfolio should efficiently represent the Brazilian economy, serving as a good proxy for what would be the Brazilian market portfolio. As scrupulously described by Castro et al. (2019) in their research paper on the 50-year history of the Bovespa index, this index is far from being a perfect benchmark of the Brazilian economy. Because the composition of this index

[2] Comdinheiro platform provides information regarding the status of control of each shareholder, this is, it informs whether or not each owner has controlling rights. I build on this information to create proxies for ownership concentration, enabling me to identify companies whose ownership structures are concentrated from those whose ownership structures are not. By doing this, I am assuming the information provided by Comdinheiro is accurate and widely reliable.

is based on negotiability[3], very few companies may have very high representativeness on the index, giving rise to material concerns of it distorting the results. As an example, they mention that, in the 1990 – 1998 period, Telebras had a median weight of 42.3% on the index. Also, the representativeness of each sector on this index has not been in line with their representativeness in the economy. From 1996 to 2017, the share of the Brazilian GDP embodied by the services sector was stable and around 68.2%, while this sector's representativeness on the Bovespa index ranged from 82,3% to 37.1%, in the same period. Similar disparities are valid for the agriculture, industrial, and other sectors. For all these reasons, instead of Bovespa, the "IBrX 100 B3" index was used as the market portfolio, whose daily returns were retrieved from B3's website. This is a total return index resulting from a theoretical portfolio constituted by the first 100 companies in a ranking of negotiability and representativeness of the Brazilian stock market, which better serves the purpose of representing a Brazilian market portfolio.

In a study performed by Netter, Stegemoller and Wintoki (2011), it is pointed that conclusions regarding M&A effects differ when different data screens are applied to the data set[4]. Whether these are public vs. private screens, timeframe screens, target screens, geographical screens, or any other screen, it seems clear that results are not the most convincing. In light of such arguments, a comprehensive time range is being considered for the study, and as few filters as possible are imposed on the data while safeguarding the congruity of the sample with the purpose of the subject under study. The imposed filters include the following:

The paper focuses on events that took place between the year 2008 and 2020, in Brazil, in an attempt to include an entire economic period, avoiding economic bias in the sample (which will further be controlled for) and diminishing the impact of abnormal M&A activity in a specific industry or year on the results.

Eikon has information regarding several corporate financial events starring Brazilian companies, including the acquisition of assets, but only events that

[3] In 2014, a new weighting methodology was adopted, reducing the impact of liquidity as a criteria for a company to be represented in the index, and giving superior importance to its market capitalization.

[4] On this study, Netter at al. (2011) interestingly point out how small are the data samples normally considered in studies regarding M&A activity. A good example of such, as stated in the referred paper, is the fact that most studies narrow their research on public companies (because information associated to those is easier to reach), meaning that around 95% of M&A deals are disregarded, as these happen between private companies. Thus, many conclusions drawn in those studies do not apply for the entirety of the M&A world, as will be the case of this paper.

encompass mergers or acquisition of interests in other companies were considered. This decision was made in light of Lima, McMahon and Costa (2021) work on the impact of assets management on business performance, demonstrating that a complex puzzle of conditions and asset-specific features affects the performance, posing a risk for the unbiasedness of my work.

Only deals between companies that do not share the same ultimate parent were considered. The reasoning behind this filter is linked with concerns of possible unobservable and unassessable intentions for such M&A events, other than improving firm performance, which would possibly undermine the results. In fact, there are several studies comparing the outcomes of deals closed between different arms of the same business group versus deals closed between independent entities. Results are largely controversial.

3.2 Data Description

Having applied the filters mentioned above, the data sample used for this study serves as an accurate representation of the Brazilian corporate landscape, which confers ideal characteristics to study the intended subject and provides incremental confidence when concluding on its results. In total, 162 events were the subject of this study[5], of which 104 are mergers and 58 are acquisitions, as shown in Table 1.

Table 1 - Event distribution by form of transaction

Event Distribution by Form of Transaction			
Total Number of Events	162	104	Number of Mergers
		58	Number of Acquisitions

Source: Seiça (2021)

[5] Similar purpose studies typically use smaller samples to run their analysis. Bhaumik and Selarka (2012), for example, analyzed 123 deals, Bortoluzzo et al. (2014) analyzed 67 deals while studying the Brazilian case of cross-border M&A performance.

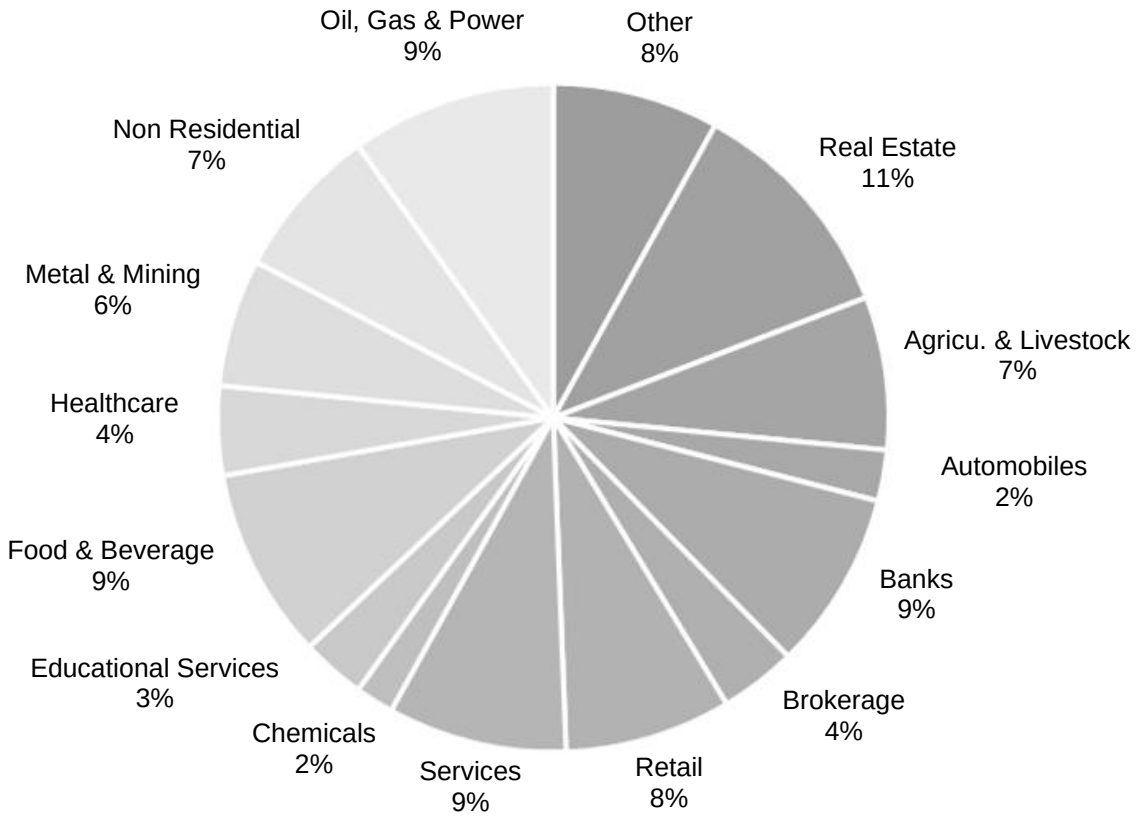
Apart from the 2014 – 2016 period, characterized by a lower dynamism in M&A activities, the sample is homogeneously distributed throughout the considered period, as demonstrated in Table 2.

Table 2 - Distribution of deals per annum

Distribution of Deals per Annum												
2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
12	4	16	22	12	11	8	5	4	18	15	24	11

Source: Seiça (2021)

Figure 1 - Event distribution across industries

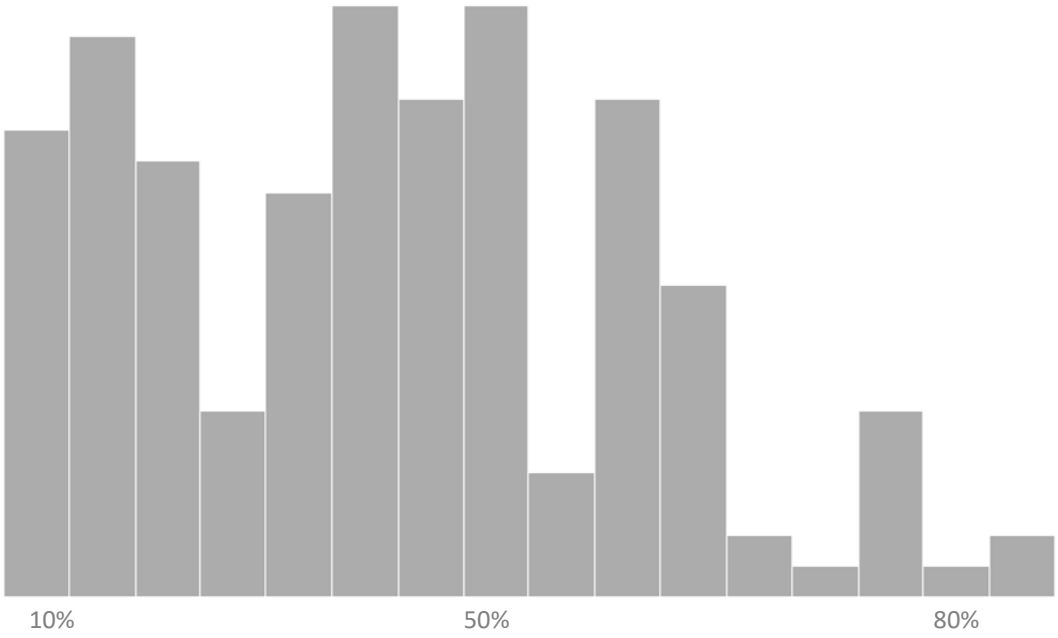


Source: Seiça (2021)

As perfectly observable in Figure 1, M&A deals are well distributed among several industries, providing the confidence needed to believe that industry-specific factors will not lead the results. Moreover, the presented distribution of deals is a good representation of what the Brazilian economy looked like over the contemplated period in terms of the weight of each sector in its GDP[6]. Moreover, from the 162 M&A events, 80 were celebrated between companies in the same industry, while 82 happened between companies in different industries, which means that possible factors affecting only each of these types of deals should also have minimal effects on results obtained with this data sample.

The M&A events under analysis on this dataset were also separated according to their levels of concentration. The metric used to control for ownership concentration was the percentage owned by the company's two biggest shareholders at the date of the announcement of each event. Utilizing data on the shareholders' structure of each acquiring company immediately before the specific date of a deal allows for the separation of deals as being partaken by a concentrated or not concentrated acquirer company. The distribution of the percentage owned by the two biggest shareholders at the date of the event is presented in Figure 2.

Figure 2 - Ownership concentration distribution



Source: Seiça (2021)

[6] According to Statista, throughout the examined period, the weight of the primary, secondary and tertiary sectors on the Brazilian economy were in line with the engagement of each industry in M&A activities.

4 METHODOLOGY

As previously stated, there is no consensus on whether or not M&A activity adds value to firms and this discordance is likely to persist for many more years, not only because theoretical works are not conclusive enough but also because empirical studies point to opposing directions. This controversy emerges from several factors that researchers disagree on. Antônio and Vidal Barbosa (2008) list the ones with the most impact on this matter: how comprehensive should a sample be for one to be able to generalize the results; should the study be focused on the short, medium, or long term; how to effectively control for variables not related to the merger but have influence on firm performance; what metric ought to be used to measure post-M&A performance. In the recent literature, two approaches are commonly employed to measure the impact of M&A on firm performance: accounting methods and event studies. The first one compares pre and post-M&A financial results (given by accounting data) and concludes regarding the changes in operating performance. The second one examines the stock market's reaction to the announcement of deals and infers regarding investors' expectations on their value-added.

Several conditions led to the avoidance of accounting methods to assess M&A effects. Studies using these techniques report very different results. Stark and Thomas (1994) report gains arising from acquisitions, while Ravenscraft and Schere (1987) found these events resulted in decreased operating performances. Other similar studies show mixed results, impeding their authors from concluding regarding the effect of M&As. The possibility of biases significantly affecting results is another source of concern when using accounting data. Serving as an example, Meeks (1977) shows how differences in the assumptions used to compute and record goodwill in the acquirer accounts may result in a downward bias to profitability. Equally influential for the target of this kind of study, Penman (2003) points out that accounting metrics typically used in the literature do not account for the cost of capital. This fact has the potential to carry biases because, even if a high accounting rate of return is found, shareholders' required rate of return may be higher, resulting in a reduction in shareholder value. For the reasons mentioned above, this paper applies the stock market model approach to assess the effect of M&A activity on corporate performance and tries to mitigate some of this method's drawbacks.

4.1 Event Study Methodology

In the first stage, the empirical strategy consists of assessing the impact of M&A events on firms. For this purpose, the event study methodology is employed. It is then performed a hypothesis test to ascertain the statistical significance of the value found. Moreover, it is examined whether or not there is a significant asymmetry in the magnitude at which such events affect companies whose ownership is considered concentrated and those whose is not.

The event study methodology was used to ascertain whether abnormal returns were experienced after the announcement of an M&A event. As explained by Armitage (1995), the expected return of a share over a period corresponds to the stock market's return of which it is part, with an adjustment for the share's risk. The abnormal return for a given period is simply the difference between the actual and the expected returns. This abnormal return is key to deduce whether or not investors find the event valuable for the company's performance. There is empirical evidence that the event study methodology is helpful for the analysis of mergers, with the abnormal returns and ex-post profitability of mergers being positively and significantly correlated for merging firms (Duso, Gugler and Yurtoglu, 2010). In line with Bhaumik and Selarka (2012) work, I pursue the so-called market model, which consists of the following steps to compute abnormal returns to the equity of each stock for a period around the M&A event:

Daily returns to the equity of an acquiring company are regressed on the daily returns of the market portfolio (the IBrX 100 B3) for a six-month period prior to the announcement date (T)[7];

Out-of-sample forecasts are then computed for a period around the announcement date (10 days and 1 day), based on the regression's estimates, according to the following equation: $F(it) = \hat{\alpha}(i) + \left[\hat{\beta}(i) * Rm(t)\right]$;

The difference between the actual and the forecasted return accounts for the abnormal return for each acquiring company ($AR(it) = R(it) - F(it)$). The sum of the daily abnormal returns over a given period of j days prior to the announcement date and j days after the announcement date adds up to the cumulative abnormal return, which establishes the ground of the analysis ($CAR(i) = \sum_{t=T-j}^{T+j} AR(it)$).

[7] As demonstrated by Armitage (1995), "the shorter the interval over which each return observation is measured (daily, weekly etc.), the easier it is to identify abnormal returns. So (…) and daily data used if possible."

The mean of all individual CARs is computed, which provides a first hint of the effect of M&A deals on firm performance. If the CAR is higher than zero, we conclude that M&A events are expected to add value to Brazilian firms. Then, a hypothesis test is performed to determine the level of statistical significance of the positive (or negative) mean CAR, providing the conclusion regarding hypothesis 1 with statistical and mathematical support.

Additionally, it is compared the mean CAR for companies with concentrated ownership structures with the mean CAR for companies with non-concentrated ownership structures. The existence of asymmetries in CARs is a preliminary step towards deducing if the concentration of a company's ownership structure had an impact on the success of M&A events performed by Brazilian public companies over the observed period. For this purpose, to differentiate concentrated ownership structures from non-concentrated ones, a concentration metric needs to be created. The proxy used to discriminate that feature is the percentage owned by the two biggest shareholders. As all M&A events happened under (virtually) the same conditions and from acquirers under (virtually) the same judicial environment, this analysis is meaningful, despite the blurring effects of bias caused by omitted variables (domestic vs. cross-border deal, for example, is a characteristic with the potential to affect the success of M&A deals, as demonstrated by Bortoluzzo et al. (2014).

As it was already made clear, there is no definite answer for whether M&A adds value, which is comprehensible given the complexity of the puzzle of variables affecting the attainment of a successful post-M&A strategy. This is why this event study is so relevant for the present study, as well as for narrowing the incontestable gap existent in the literature related to modern outcomes of M&A activity in Brazil and the impact of ownership structure in the corresponding results.

4.2 Multiple Linear Regression Model

In an attempt to thoroughly examine what is proposed in hypothesis 2, several multiple linear regression models are built and run. The purpose of these tests is to rule if agency conflict type I and type II are determinant factors of the value generated by M&A events and to what extent. The model used is an adaption of Dickerson et al. (1997) methodology, and it has the following specification:

$$CAR = \alpha + \sum_{h} \theta h \, (Ownership\ Characteristics) + \sum_{p} \gamma p \, (Economic\ Variables) + \sum_{q} \delta q \, (Deal\ Characteristics) + \sum_{k} \beta k \, (Firm\ Characteristics)$$

4.2.1 Dependent Variable

The CAR over a 10 (***CAR10***) or a 1 (***CAR1***) day period around the announcement date is taken as the dependent variable in this model. The direct effect of M&A on corporate value cannot be explicitly observed, but it would be captured by the market in the form of a stock price reaction. Thus, the CAR is a good proxy for this effect. By regressing other variables on the CAR values, it is possible to understand what affects it and by how much. This exercise will enable one to conclude regarding hypothesis 2.

4.2.2 Explanatory and Control Variables

Ownership Characteristics:

Because the goal is to determine whether or not increased ownership concentration has both a positive and a negative impact on the success of M&A deals, an explanatory variable able to capture both effects needs to be created. As previously explained, more prominent shareholders are expected to carry out stricter monitoring over management actions, diminishing agency conflict type I and bringing about positive abnormal returns. This effect is captured by the variables ***TypeI***, defined as the percentage owned by the two biggest shareholders, and variable ***TypeISQRD***,

which is the same variable squared, accounting for the non-linear relationship it has with firm performance (CAR). These variables are tested together to capture and control for the mentioned bell-shaped relationship between ownership concentration and performance. On the other hand, control allied with mismatching cash-flow rights may result in expropriation by controlling shareholders. Because M&A activity is cash-flow deviating, investors may find them not to be value-adding and punish firms with this kind of ownership structure. Two variables were built to capture this effect. The first one is ***TypeIID***, which is a dummy variable that takes the value 1 if the sum of the ownership owned by all controlling shareholders is below 50%. The other variable capturing this effect is ***TypeIIN***, which is defined as 1 minus the total percentage owned by all controlling shareholders. The closer to 1, the more significant the gap between voting and cash-flow rights, meaning the more probable it is that agency conflict type II exists. When controlling shareholders' cash-flow rights are well below their voting rights, one expects agency conflict type II to be triggered and thus these variables are expected to have a negative effect on the CAR. These variables are used separately in the models, according to their suitability.

Economic Variables:

As noted by Dickerson et al. (1997), the outcomes of acquisitions may be subject to effects of the economic environment felt during and following the deal. The variables GDP, Inflation, and Unemployment are included in the models to control for such effects. These represent, respectively, the GDP growth rate, the inflation, and the unemployment level at the year of the announcement.

Firm Characteristics:

Many firm characteristics are known to have an impact on their profitability. The success (or not) of M&A events is also affected by such firm features, known to all investors in the market. For those reasons, it is common in the literature to control for said effects. Douma, George and Kabir (2006) gathered enough evidence that share ownership by foreign investors impacts firm profitability. For that reason, the dummy variable ***Nationality*** is included, which takes the value of 1 if the majority interest in the company is Brazilian and 0 if it is a foreigner. In line with Dickerson et al. (1997)

work, the model includes control variables for the longevity of the firm, which is linked to its positioning in the market and experience in this kind of operation, and its size, which impacts the firm's bargaining power before suppliers and its ability to set prices. Those characteristics are controlled by the variables ***Age*** (age of the acquirer) and ***Size*** (proxied by the firm's assets), respectively. Not less significant for firm performance is the effect of leverage on the management team behavior. Interest payments not only impose distress costs that could materialize in bankruptcy or restructuring processes, but it also results in greater monitoring of managers' actions by debt holders, decreasing agency conflict type I. On the other hand, it decreases the cash flow available for expropriation, decreasing agency conflict type II. The net effect of the level of leverage in a firm depends on several variables. This effect is captured in the model by the variable ***Leverage***, which is proxied by the debt to equity ratio. All firm characteristics are lagged by one year because their values may change after the event has happened, which would prevent one from understanding their effect on M&A decision-making and the corresponding outcome.

Deal Characteristics:

Many studies in this field of research focus their attention on what explains M&A outcomes. Most conclude that the type of deal agreed to has a relevant role in integration and performance. For this reason, the dummy variable ***FormofTransaction*** is included, which assumes the value 1 if it is a merger or 0 if it is an acquisition. Moreover, it is essential to consider whether the acquiree is a player in the same industry of the acquirer. This fact hints at what type of synergy may be being pursued in each deal. The dummy variable ***SameIndustry*** takes the value 1 if the deal was closed among companies in the same industry and 0 otherwise.

The extended specification of the model is thus:

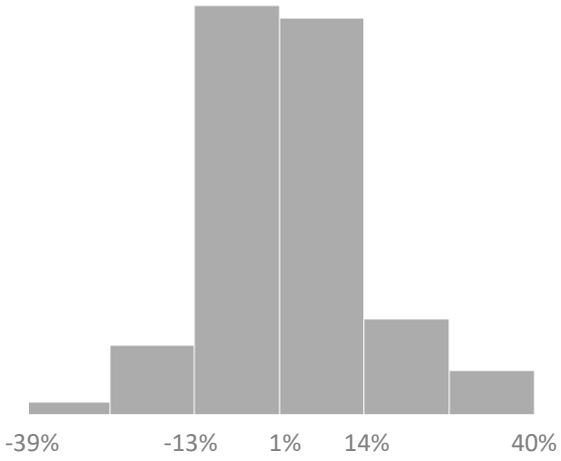
$$\begin{aligned} CAR(10/1) = {} & \alpha + \theta 1\,(TypeISQRD) + \theta 2\,(TypeIID) + \gamma 1\,(GDP) + \gamma 2\,(Inflation) \\ & + \gamma 3\,(Unemployment) + \delta 1\,(Nationality) + \delta 2\,(Age) + \delta 3\,(Size) \\ & + \delta 4\,(Leverage) + \beta 1\,(FormofTransaction) + \beta 2\,(SameIndustry) \end{aligned}$$

5 RESULTS

5.1 Event Study Analysis

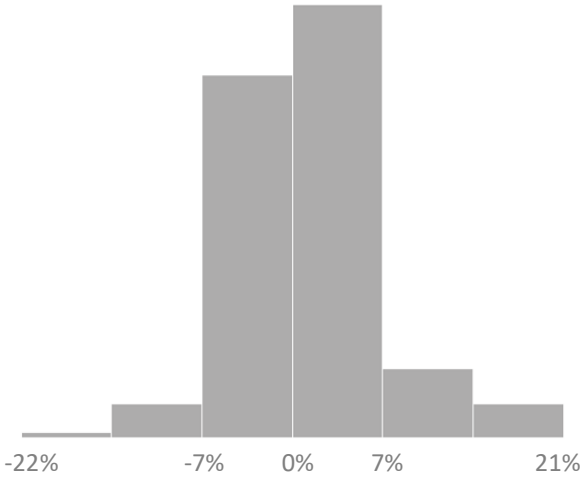
In order to assess the impact of M&A activity in Brazilian public companies over the 2008 to 2020 period, the event study methodology was applied. For this exercise, two event windows were considered: a wider one ([-10, +10] days around the announcement date) and a narrower one ([-1, +1] days around the announcement date). The cumulative abnormal returns for each window are referenced as CAR10 and CAR1, respectively. Figure 3 and Figure 4 show the distribution of CARs for the wider and narrower windows, respectively.

Figure 3 - CAR10 distribution



Source: Seiça (2021)

Figure 4 - CAR1 distribution



Source: Seiça (2021)

The cumulative average abnormal return (CAAR) for the sample of 162 deals is +3% for the [-10, +10] event window and +1% for the [-1, +1] event window. Hypotheses tests were also performed to ascertain whether the means were significantly higher than 0. The t-statistic was calculated according to the following formula: $t = \frac{(\bar{x} - \mu 0)}{s/\sqrt{n}}$.

H0: $\overline{\text{CAAR10}} = 0$

H1: $\overline{\text{CAAR10}} > 0$

H0: $\overline{\text{CAAR1}} = 0$

H1: $\overline{\text{CAAR1}} > 0$

Table 3 - CAR10 hypothesis testing

CAAR 10	
Average	0.03
Hypothesized Mean	0
Standard Deviation	0.13
Sample Size	162
t Statistic	2.53
t Critical Value (5%)	1.65
t Critical Value (1%)	2.35
P Value	0.006

Source: Seiça (2021)

Table 4 - CAR1 hypothesis testing

CAAR 1	
Average	0.01
Hypothesized Mean	0
Standard Deviation	0.06
Sample Size	162
t Statistic	2.00
t Critical Value (5%)	1.65
t Critical Value (2.5%)	1.98
P Value	0.024

Source: Seiça (2021)

As it can be seen in Table 3 and Table 4, the cumulative average abnormal returns for a 10 day and a 1 day period around the announcement date are significantly higher than 0, at a 1% and a 2.5% significance level, respectively. There is, then, comprehensive empirical support to the hypothesis that mergers and acquisitions do improve firm performance and are perceived by investors as value-adding events. This finding is in line with Matias and Pasin (2001) results and contrary to Rocha, Iooty and Carlos Ferraz (2001) conclusions.

Table 5 - Average CAR by level of ownership concentration

	CAR10	CAR1
Concentrated Ownership Structure	3.31%	1.26%
Not Concentrated Ownership Structure	2.22%	0.78%

Source: Seiça (2021)

Following the proposed methodology, a threshold of ownership concentration was considered to differentiate companies with concentrated ownership structures from those whose ownership structures are not concentrated. Notably, only companies in which the two biggest investors own 50% or more of the shares were considered to have concentrated ownership structures. The average CARs were independently computed for each of these groups, hoping to find any asymmetry that could provide a first hint on the net effect of ownership concentration on the success of M&A deals.

Table 5 summarizes the obtained results. Having found proof that M&A deals tend to add value to companies in Brazil, the average CARs obtained for the different groups of companies suggest that the level of ownership concentration may have an impactful effect on those deals (as hypothesized). According to the numbers attained, when compared to the other group, companies with high levels of ownership concentration benefit more from M&A deals. This veracity of this comparison is valid not only for the 50% threshold (displayed in Table 5), but it also holds for higher levels of ownership concentration (60%, 70%, 80%, and 90%).

The following section describes an exercise intended to strip the net effect of ownership concentration on the success of M&A deals into its two gross effects: reduction of agency type I and the prompting of agency conflict type II. The magnitude of their individual effects is studied, and the results are carefully interpreted.

Table 6 - Correlation matrix

Indust.	FormTra	Leverage	Size	Age	National.	Unempl.	Inflation	GDP	TypeIIN	TypeIID	TypeISQ.	TypeI	
-0.211	0.100	0.208	0.178	0.325	0.224	-0.038	0.072	-0.022	-0.075	-0.658	0.967	1	TypeI
-0.199	0.103	0.235	0.166	0.394	0.193	-0.048	0.062	0.010	-0.705	-0.634	1		TypeISQRD
0.088	-0.102	0.001	0.146	-0.139	-0.145	-0.151	0.125	0.002	0.801	1			TypeIID
0.212	-0.083	-0.084	-0.100	-0.133	-0.233	-0.115	0.077	0.018	1				TypeIIN
0.084	-0.192	-0.033	0.016	0.162	0.018	-0.431	0.116	1					GDP
0.004	-0.026	0.043	0.085	0.082	-0.036	-0.741	1						Inflation
0.025	0.170	-0.029	-0.080	-0.133	0.029	1							Unempl.
-0.074	0.215	0.235	0.163	0.280	1								National.
0.043	-0.016	0.263	0.180	1									Age
-0.161	-0.046	0.476	1										Size
-0.100	-0.081	1											Leverage
-0.116	1												ForTrans.
1													SameInd.

Source: Seiça (2021)

The correlation matrix presented in Table 6 aims at displaying the fact that some variables are highly correlated, meaning that their simultaneous presence within the regression model may lead to multicollinearity issues. The matrix is very relevant in demonstrating why the better suiting models do not include all explanatory and control variables.

Table 7 - Regression results without control variables

	CAR10			
	(1)	(2)	(3)	(4)
TypeI	0.900*****	-	-	-0.070
	(0.071)	-	-	(0.717)
TypeISQRD	-	-	-	0.171
	-	-	-	(0.679)
TypeIID	-	-0.047******	-	-
	-	(0.027)	-	-
TypeIIN	-	-	-0.072*****	-
	-	-	(0.065)	-

Source: Seiça (2021)
*, ** corresponds to a 10% and 5% significance levels, respectively

Table 7 introduces the results of the regressions in which the explanatory variables (capturing ownership concentration effects) are regressed against the CAR10, leaving out all control variables. As hypothesized, the variable “TypeI” – which captures agency conflict type I effect – returns a positive sign, indicating that increased concentration levels have a beneficial impact on the success of M&A deals through stricter monitoring of managers' activities. This result is statistically significant at a 10% level. Oppositely, the variables “TypeIID” and “TypeIIN” – which capture agency conflict type II effect – return a negative sign, which is a harbinger of the adverse effect of increased concentration of ownership in the absence of matching cash flow rights in the success of M&A events, as hypothesized. These variables are statistically significant at a 5% and 10% level, respectively. Because the former variable is better adjusted to the dependent variable, it is preferred to capture the agency conflict type II effect on the following regressions.

To test the proposition of non-linearity in the relationship between firm performance and ownership concentration, the variables “TypeI” and “TypeISQRD” were simultaneously regressed on the CAR10. Though, results were not statistically

significant and were thus left out of this paper. One plausible explanation for this unexpected result and its lack of significance is that the sample contains a relatively small number of events involving companies with very highly concentrated ownership structures, as one can observe in Figure 2.

The same regressions were run with CAR1 as the dependent variable, but they were not included in this section because the results were statistically less significant.

Table 8 - Regression results with control variables

	CAR10					
	(1)	(2)	(3)	(4)	(5)	(6)
TypeI	0.111**	-	0.109**	-	0.031	0.075
	(0.027)	-	(0.047)	-	(0.639)	(0.277)
TypeIID	-	-0.044**	-	-0.044**	-0.038	-0.022
	-	(0.038)	-	(0.050)	(0.173)	(0.440)
GDP	-	-	-0.065	-0.080	-	
	-	-	(0.404)	(0.312)	-	
Inflation	-1.473	-1.313	-1.718	-1.620	-	-1.408
	(0.142)	(0.191)	(0.111)	(0.132)	-	(0.162)
Unemployment	-0.683	-0.771	-0.939	-1.059	-	-0.726
	(0.244)	(0.190)	(0.171)	(0.126)	-	(0.218)
Nationality	-	-	0.015	0.015	-	-
	-	-	(0.574)	(0.584)	-	-
Age	-	-	0.000	0.000	-	-
	-	-	(0.772)	(0.565)	-	-
Size	-	-	0.000	0.000	-	-
	-	-	(0.875)	(0.759)	-	-
Leverage	-0.006**	-0.005**	-0.006**	-0.006**	-	-0.005**
	(0.012)	(0.035)	(0.024)	(0.029)	-	(0.020)
FormofTransaction	0.041*	0.043**	0.035	0.036	-	0.041*
	(0.061)	(0.049)	(0.138)	(0.116)	-	(0.062)
SameIndustry	-	-	0.013	0.009	-	-
	-	-	(0.544)	(0.661)	-	-

Source: Seiça (2021)
*, ** corresponds to a 10% and 5% significance levels, respectively

Table 8 projects the results of six different models, all of which assuming “CAR10” as the dependent variable, “TypeI” as the variable capturing agency conflict type I effect, and “TypeIID” as the explanatory variable for agency conflict type II.

Model 1 regresses the variable “TypeI” along with the most significant controls on “CAR10”. The magnitude of its coefficient remains unchanged (positive, as expected), while its statistical significance increases for a 5% level. Model 2 is similar to model 1, but it regresses “TypeIID” on the CAR to understand the effect of the agency conflict captured by this variable on M&A success. Again, the coefficient preserves its negative sign and remains significant at a 5% level, corroborating once again what is proposed in the second hypothesis.

Model 3 and Model 4 rerun the regressions mentioned above but include all controlling variables. Even though the magnitude of the coefficients remains unaltered, their significance slightly decreases (remaining at the 5% level, though). Such adjustment might be related to the fact that some variables present high levels of correlation, eventually culminating in problems of multicollinearity.

Model 5 and Model 6 include the variables “TypeI” and “TypeIID” together in the same regression, with and without controls, respectively. In both models, the magnitude of their coefficients remained unaltered, but their significance was compromised. The high correlation existent among both variables (-0.6577) results in a split of statistical significance between them and could indicate the presence of multicollinearity, in which case could jeopardize the validity of the individual predictors. In order to detect this problem, VIF tests were performed for both models. Their results are presented in Table 9. There is no evidence of multicollinearity, as no VIF is higher than 4, meaning that, despite the variables being statistically insignificant, their magnitudes are valid and offer support for what is hypothesized.

Table 9 - VIF tests

	VIF	
	(5)	(6)
TypeI	1.76	2.40
TypeIID	1.76	2.18
GDP	-	1.47
Inflation	-	2.56
Unemployment	-	3.18
Nationality	-	1.22
Age	-	1.30
Size	-	1.46
Leverage	-	1.41
FormofTransaction	-	1.18
SameIndustry	-	1.13

Source: Seiça (2021)

The same six regressions were run on “CAR1” as a robustness test. Even though the signals of the explanatory variables remained unchanged, they were statistically insignificant and thus omitted from this section.

Ultimately, the obtained results provide comprehensive support for the initially formulated hypothesis 2. Increased levels of ownership concentration lessen the pejorative effects of agency conflict type I (through increased monitoring) and, along with asymmetrical cash-flow rights, trigger agency conflict type II, which leads to damaging repercussions. The outcomes of the regressions point precisely to that idea: the diminished effect of agency conflict type I through increased ownership concentration positively affects M&A success, while the inflated effect of agency conflict type II through a combination of increased ownership concentration and low cash-flow rights negatively affects the outcome of M&A events.

6 CONCLUSIONS AND DISCUSSION

Two hypotheses were drawn based on a wide range of existing literature and empirical evidence on various topics of interest, regarding the outcomes of M&A activity and its particular impact on firms operating in emerging markets. The hypotheses are in line not only with said literature but also with modern corporate finance theory. They pose that M&A events add value to Brazilian firms and that increased levels of ownership concentration have two opposite effects on the outcome of such deals. On the one hand, it abates conflict type I (between managers and shareholders), positively affecting M&A deals’ success. On the other hand, it triggers agency conflict type II (between majority shareholders and minority shareholders), negatively affecting the outcome of M&A deals.

Concluding, the numbers obtained provide specific and comprehensive reasons to infer regarding the two hypotheses initially posed. First, the average CARs, both for a 10 day and a 1 day period around the announcement date, are positive and statistically significant, providing proper support to confirm that M&A deals were value accretive to Brazilian firms over the period between 2008 and 2020. Moreover, the magnitude of the statistically significant coefficients of the variables that capture agency conflict type I and type II effects on M&A success are enlightening: when ownership concentration levels are high, the adverse effects of agency conflict type I are alleviated, but the harmful effects of agency conflict type II are intensified, as

hypothesized. Overall, the net effect of ownership concentration on M&A deals' success seems to be positive, as sustained by the asymmetrically higher CARs experienced by companies with concentrated ownership structures over both windows of time considered (3.31% vs. 2.22% and 1.26% vs. 0.78%). These values suggest that, on average, increased ownership concentration levels run in favor of the objective of value maximization of firms.

Even though these results are auspicious and pertinent for the relevant literature, the inferred conclusions should not be taken as undeniable for the entire M&A universe nor all geographies. As noted by several authors exploring this theme, several aspects of these studies limit the universal applicability of their conclusions. Among others, there is no consensus on what the best metric of M&A success is, posing an obvious obstacle for generalizing conclusions. Moreover, only public companies are being considered in the data sample, leaving out a majority stake of the Brazilian's M&A market, meaning that a "public company" bias could be affecting the obtained results. Building on the findings of this paper, it would be exciting to see future research on this field focusing more on the relationship between ownership concentration and the success of M&A deals, particularly in emerging markets. Namely, a crucial next step in the field, and in order to ensure comparability between different studies, relates to the creation of a variable that adequately captures the effect of agency conflict type II, avoiding proxies, and to the achievement of a consensus on a universally accepted metric of M&A performance that would allow to incorporate private deals in the sample, avoiding bias.

Despite these limitations, this type of empirical proof separating the dubious effects of ownership concentration in M&A success (with a focus on the Brazilian market) is, to the best of my knowledge, a novelty and could serve as the basis for further research. Most importantly, these results may be precious for practitioners, as the opposing effects of ownership concentration are thoughtfully allocated to their corresponding causes. It is thus possible to capitalize on such knowledge to individually adjust due diligence practices to each firm when advising on M&A deals, increasing the probability of success for the firm and allowing advisors to build stronger reputations in corporate finance advisory markets.

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